## Table C17. Hydrocarbon concentrations (μg/ml) from different oil standards.[1-4]

| | Nonane (n-$C_9$) | Decane (n-$C_{10}$) | Undecane (n-$C_{11}$) | Dodecane (n-$C_{12}$) | Tridecane (n-$C_{13}$) | Tetradecane (n-$C_{14}$) | Pentadecane (n-$C_{15}$) | Hexadecane (n-$C_{16}$) | Heptadecane (n-$C_{17}$) | Pristane | Octadecane (n-$C_{18}$) | Phytane | Nonadecane (n-$C_{19}$) | Eicosane (n-$C_{20}$) | Heneicosane (n-$C_{21}$) | Docosane (n-$C_{22}$) | Tricosane (n-$C_{23}$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Restek Diesel Fuel Oil #2 Standard (Unweathered, Cat 31233) Dissolved in Methylene Chloride** | | | | | | | | | | | | | | | | | |
| | 8.04 | 17.0 | 44.3 | 51.4 | 56.2 | 44.7 | 56.0 | 45.1 | 33.4 | 31.8 | 25.2 | 13.5 | 17.4 | 11.0 | 6.75 | 3.31 | 1.86 |
| | 6.43 | 15.6 | 45.1 | 50.6 | 63.9 | 51.3 | 56.9 | 41.2 | 34.5 | 32.6 | 24.1 | 11.5 | 17.7 | 11.5 | 6.40 | 3.28 | 1.93 |
| | 4.78 | 11.2 | 31.8 | 35.5 | 44.3 | 38.6 | 38.8 | 28.9 | 24.3 | 23.1 | 17.1 | 8.29 | 12.6 | 8.22 | 4.62 | 2.38 | 1.41 |
| | 4.22 | 12.4 | 32.9 | 37.6 | 45.9 | 50.0 | 44.2 | 34.5 | 29.0 | 28.0 | 19.6 | 11.9 | 13.4 | 9.19 | 5.58 | 2.68 | 1.34 |
| | 4.60 | 14.2 | 36.0 | 40.9 | 50.3 | 52.4 | 49.2 | 38.0 | 31.9 | 30.7 | 22.7 | 13.2 | 14.7 | 10.0 | 6.00 | 2.81 | 1.39 |
| Average | 5.61 | 14.1 | 38.0 | 43.2 | 52.1 | 47.4 | 49.0 | 37.6 | 30.6 | 29.2 | 21.8 | 11.7 | 15.2 | 10.00 | 5.87 | 2.89 | 1.59 |
| Std. Dev. | 1.60 | 2.31 | 6.31 | 7.39 | 8.03 | 5.74 | 7.74 | 6.22 | 4.11 | 3.84 | 3.34 | 2.08 | 2.30 | 1.34 | 0.82 | 0.40 | 0.28 |
| **Fuel Oil #2 from May 15, 1997 Oil Spill at the Arthur Kill Dissolved in Methylene Chloride** | | | | | | | | | | | | | | | | | |
| | 12.9 | 17.8 | 41.2 | 45.5 | 66.5 | 97.3 | 136 | 97.7 | 102 | 61.7 | 81.8 | 34.5 | 83.7 | 53.9 | 37.9 | 23.5 | 14.5 |
| | 12.1 | 21.7 | 38.8 | 46.6 | 69.5 | 126 | 112 | 85.9 | 89.0 | 64.4 | 68.1 | 44.6 | 58.4 | 48.2 | 38.0 | 25.9 | 16.5 |
| | 12.1 | 21.7 | 38.8 | 46.5 | 71.0 | 124 | 112 | 79.6 | 88.8 | 64.0 | 67.4 | 44.5 | 58.1 | 48.3 | 38.2 | 26.4 | 17.1 |
| Average | 12.3 | 20.4 | 39.6 | 46.2 | 69.0 | 116 | 120 | 87.7 | 93.2 | 63.3 | 72.5 | 41.2 | 66.7 | 50.1 | 38.0 | 25.3 | 16.1 |
| Std. Dev. | 0.46 | 2.27 | 1.41 | 0.61 | 2.30 | 16.1 | 13.8 | 9.21 | 7.41 | 1.46 | 8.13 | 5.77 | 14.7 | 3.26 | 0.17 | 1.56 | 1.35 |
| **Home Heating Oil from January 19, 1996 North Cape Oil Spill at Rhode Island Dissolved in Methylene Chloride** | | | | | | | | | | | | | | | | | |
| | 7.32 | 18.8 | 49.5 | 45.5 | 70.7 | 58.7 | 69.1 | 64.7 | 69.6 | 34.3 | 51.7 | 21.3 | 43.8 | 31.3 | 20.2 | 0.74 | 6.39 |

[1] The concentrations of the individual aliphatic hydrocarbons and the total petroleum hydrocarbons were determined using external standard calculations.

[2] When an individual aliphatic hydrocarbon was not detected, its concentration was replaced by nd.

[3] MDL values were not determined for these standards. A value of 0 was used for each nondetected analyte in the summation formulae. When the value of the average and standard deviation for an individual hydrocarbon equals zero, these values are replaced by nd.

[4] The concentrations for n-$C_8$ will be not reported, since it was difficult to identify this peak in samples and to determine MDL for n-$C_8$. A value of 0 was used for n-$C_8$ in summation formulae.

## Table C17. Continued.[1-4]

| | Tetracosane (n-$C_{24}$) | Pentacosane (n-$C_{25}$) | Hexacosane (n-$C_{26}$) | Heptacosane (n-$C_{27}$) | Octacosane (n-$C_{28}$) | Nonacosane (n-$C_{29}$) | Triacontane (n-$C_{30}$) | n-Hentriacontane (n-$C_{31}$) | Dotriacontane (n-$C_{32}$) | Tritriacontane (n-$C_{33}$) | Tetratriacontane (n-$C_{34}$) | Pentatriacontane (n-$C_{35}$) | Hexatriacontane (n-$C_{36}$) | Heptatriacontane (n-$C_{37}$) | Octatriacontane (n-$C_{38}$) | Nonatriacontane (n-$C_{39}$) | Tetracontane (n-$C_{40}$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Restek Diesel Fuel Oil #2 Standard (Unweathered, Cat 31233) Dissolved in Methylene Chloride** | | | | | | | | | | | | | | | | | |
| | 0.88 | 0.54 | 0.30 | 0.24 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| | 1.03 | 0.69 | 0.44 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| | 0.78 | 0.51 | 0.45 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| | 0.38 | 0.10 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | 0.56 | 0.30 | 0.57 |
| | 0.38 | 0.03 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | 0.18 | 0.29 | nd |
| Average | 0.69 | 0.37 | 0.24 | 0.05 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | 0.15 | 0.12 | 0.11 |
| Std. Dev. | 0.30 | 0.29 | 0.22 | 0.11 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | 0.24 | 0.16 | 0.25 |
| **Fuel Oil #2 from May 15, 1997 Oil Spill at the Arthur Kill Dissolved in Methylene Chloride** | | | | | | | | | | | | | | | | | |
| | 7.08 | 3.23 | 1.44 | 0.56 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |
| | 7.62 | 3.24 | 0.74 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | 0.29 | nd |
| | 8.11 | 3.65 | 1.01 | 0.13 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | 0.29 | nd |
| Average | 7.60 | 3.37 | 1.06 | 0.23 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | 0.19 | nd |
| Std. Dev. | 0.52 | 0.24 | 0.35 | 0.29 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | 0.17 | nd |
| **Home Heating Oil from January 19, 1996 North Cape Oil Spill at Rhode Island Dissolved in Methylene Chloride** | | | | | | | | | | | | | | | | | |
| | 3.27 | 1.68 | 1.04 | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd |

[1] The concentrations of the individual aliphatic hydrocarbons and the total petroleum hydrocarbons were determined using external standard calculations.

[2] When an individual aliphatic hydrocarbon was not detected, its concentration was replaced by nd.

[3] MDL values were not determined for these standards. A value of 0 was used for each nondetected analyte in the summation formulae. When the value of the average and standard deviation for an individual hydrocarbon equals zero, these values are replaced by nd.

[4] The concentrations for n-$C_8$ will be not reported, since it was difficult to identify this peak in samples and to determine MDL for n-$C_8$. A value of 0 was used for n-$C_8$ in summation formulae.

## Table C17. Continued.[1-4]

| | Total Petroleum Hydrocarbons[5] | Total Concentrations of Individual Hydrocarbons[6] | Total: Pristane + Phytane | n-$C_{17}$/Pristane | n-$C_{18}$/Phytane | Pristane/Phytane | Total: Odd No Carbons[7] | Total: Even No Carbons[8] | Carbon Preference Index (CPI)[9] | Sum: $C_{10}$-$C_{12}$-$C_{14}$[10] | Sum: $C_{22}$-$C_{24}$-$C_{26}$-$C_{28}$[11] | Weathering Index (WI)[12] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Restek Diesel Fuel Oil #2 Standard (Unweathered, Cat 31233) Dissolved in Methylene Chloride** | | | | | | | | | | | | |
| | 1370 | 476 | 45.3 | 1.05 | 1.87 | 2.36 | 225 | 206 | 1.09 | 120 | 4.49 | 26.8 |
| | 1270 | 478 | 44.1 | 1.06 | 2.10 | 2.83 | 233 | 201 | 1.16 | 119 | 4.74 | 25.2 |
| | 903 | 339 | 31.4 | 1.05 | 2.07 | 2.79 | 163 | 145 | 1.13 | 86.6 | 3.61 | 24.0 |
| | 1100 | 387 | 39.9 | 1.04 | 1.65 | 2.36 | 177 | 170 | 1.04 | 102 | 2.91 | 35.2 |
| | 1200 | 422 | 43.9 | 1.04 | 1.72 | 2.32 | 194 | 184 | 1.06 | 110 | 3.18 | 34.5 |
| Average | 1170 | 421 | 40.9 | 1.05 | 1.88 | 2.53 | 199 | 181 | 1.10 | 108 | 3.79 | 29.1 |
| Std. Dev. | 179 | 59.7 | 5.70 | 0.01 | 0.20 | 0.26 | 30.2 | 25.0 | 0.05 | 13.9 | 0.80 | 5.32 |
| **Fuel Oil #2 from May 15, 1997 Oil Spill at the Arthur Kill Dissolved in Methylene Chloride** | | | | | | | | | | | | |
| | 2990 | 1020 | 96.2 | 1.65 | 2.37 | 1.79 | 498 | 426 | 1.17 | 161 | 32.0 | 5.02 |
| | 2830 | 982 | 109 | 1.38 | 1.53 | 1.44 | 438 | 436 | 1.01 | 199 | 34.2 | 5.82 |
| | 2830 | 977 | 109 | 1.39 | 1.51 | 1.44 | 440 | 429 | 1.03 | 198 | 35.5 | 5.57 |
| Average | 2880 | 993 | 105 | 1.47 | 1.80 | 1.56 | 459 | 430 | 1.07 | 186 | 33.9 | 5.47 |
| Std. Dev. | 89.8 | 23.6 | 7.22 | 0.15 | 0.49 | 0.20 | 34.2 | 4.91 | 0.09 | 21.9 | 1.79 | 0.41 |
| **Home Heating Oil from January 19, 1996 North Cape Oil Spill at Rhode Island Dissolved in Methylene Chloride** | | | | | | | | | | | | |
| | 2160 | 672 | 55.6 | 2.03 | 2.43 | 1.61 | 338 | 278 | 1.22 | 125 | 5.05 | 24.7 |

[1] The concentrations of the individual aliphatic hydrocarbons and the total petroleum hydrocarbons were determined using external standard calculations.

[2] When an individual aliphatic hydrocarbon was not detected, its concentration was replaced by nd.

[3] MDL values were not determined for these standards. A value of 0 was used for each nondetected analyte in the summation formulae. When the value of the average and standard deviation for an individual hydrocarbon equals zero, these values are replaced by nd.

[4] The concentrations for n-$C_8$ will be not reported, since it was difficult to identify this peak in samples and to determine MDL for n-$C_8$. A value of 0 was used for n-$C_8$ in summation formulae.

[5] Determined from the total peak areas in the chromatogram from n-$C_8$ to n-$C_{40}$ minus any contributions from the internal standard areas.

[6] Sum of the concentrations of the individual aliphatic hydrocarbons n-$C_9$ through n-$C_{40}$ plus the concentrations of pristane and phytane.

[7] The total of the concentrations of the aliphatic hydrocarbons with an odd number of carbon atoms.

[8] The total of the concentrations of the aliphatic hydrocarbons with an even number of carbon atoms.

[9] Carbon Preference Index (CPI) defined as the ratio of the total of the concentrations of the aliphatic hydrocarbons with an odd number of carbons to the total concentration of the alphatic hydrocarbons with an even carbon number.

[10] The total of the concentrations of n-$C_{10}$, n-$C_{12}$, and n-$C_{14}$.

[11] The total of the concentrations of n-$C_{22}$, n-$C_{24}$, n-$C_{26}$, and n-$C_{28}$.

[12] Weathering Index (WI) defined as the ratio of the total concentration of n-$C_{10}$, n-$C_{12}$, and n-$C_{14}$ to the total concentration of n-$C_{22}$, n-$C_{24}$, n-$C_{26}$, and n-$C_{28}$.